

Continuing Experience in the Combination of Radiotherapy and Surgery in the Treatment of Uterine Cancer

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For the last 30 years a considerable part of my work has centered round the problem of combining irradiation and surgery in the treatment of uterine cancer, both of cervix and corpus. There was nothing unusual about the latter because radium in the uterus before operation, or in the vagina after operation, has been used by surgeons for many years. But as far as carcinoma of the cervix was concerned the concept of operating on irradiated tissues was considered foolhardy to an extreme and was condemned by such outstanding authorities at the time as the late Victor Bonney of London and Heyman of Radiumhemmet, Stockholm. The reasons for my determination to explore this field, and the philosophy that activated the research, have been published elsewhere (Stallworthy, 1964; 1966). Mr. Bonney, who was my chief in London in 1936-1937, when I was one of his last pupils, was interested in our Oxford research as was Joe Vincent Meigs [late President of the Society of Pelvic Surgeons]. Both were sceptical of its outcome and neither lived to see the results. I will use two recent cases to illustrate the following four points:

1. That high doses of irradiation, though not a desirable prelude to surgery, are not an absolute contraindication.

2. That the final criterion of radiation response is not measured

by exfoliative cytology, but by the length of time the patient lives without further evidence of tumour formation.

3. That planned combined therapy ab initio is less traumatic for both patient and surgeon than salvage surgery after failed irradiation.

4. That teamwork involving radiotherapist and surgeon is essential for success.

Two Case Histories

The first illustrative case concerns an adenocarcinoma of the cervix in an English woman aged 34 and para 3. This was in July 1963. She had a stage 2 carcinoma of the cervix, reasonably well differentiated and graded Broder 2. She was referred to the radiotherapy department at Liverpool, where a total dose of 9,000 mg hours of radium was given to the cervix and vaginal vault. This was followed by high energy irradiation with cobalt 60 to a total dose of 5,520 rads.

Two and a half years later bleeding recurred, and examination confirmed the presence of invasive cancer. The position looked hopeless because of the so-called recurrence after very high dose radiation therapy.

The patient was transferred to Oxford for a second opinion, and as the tumour was clinically operable and the patient only 36 with three children dependent upon her,

it was decided that she should be given the only opportunity of survival now open to her. On 3-3-66 a Wertheim hysterectomy was performed with full appreciation of the risks involved, particularly in relation to necrosis and fistulae. Examination of the surgical specimen demonstrated tumour cells in the cervix, corpus, paracolpos, parametrium, and left obturator node. Fortunately the postoperative progress was uneventful, and the patient nine months later is alive, well, and caring for her family.

The second patient came from America. She was aged 60, nulliparous, and in November, 1964, had been treated in New York for an adenocarcinoma of the cervix, stage 3, and poorly differentiated.

A total dose of 5,300 mg hours of radium application was given to the cervix with associated high energy irradiation using cobalt 60 and a dose of 4,000 rads. She was carefully followed up and on 10-1-65, just one year after treatment, she was symptom-free but was admitted to hospital for a progress study. The report was given: "Excellent response to radiotherapy."

The patient was an Englishwoman who had lived for some years in New York where her husband had recently died, and she decided to return to Britain. Within five months after the progress study, there was a recurrence of uterine pain and vaginal bleeding. Active growth was demonstrated at

curettage. Further irradiation was considered useless and the prognosis looked grim. Her surgeon in New York had given her a letter of introduction to the Oxford Department, where on 4-18-66 a Wertheim hysterectomy was performed, 19 months after the irradiation. Growth was demonstrated in the cervix and in the parametrium, but not in the corpus or the nodes. Postoperative recovery was uneventful, and two months later the patient, when reporting for her follow-up examination, stated "I feel human once again."

Discussion

The total series of post-irradiation Wertheims now performed at Oxford since 1942 is 360, and the fact that there have been only two deaths and two ureteric fistulae has clearly established that this is a safe and practical procedure. In spite of the increasing number of patients similar to the two illustrated, who are now referred for salvage, there has not been a ureteric fistula for many years. Two modifications of the original Bonney technique, designed to protect the ureter and bladder, have been described elsewhere (Stallworthy, 1964) and have proved effective. One death was due to pulmonary embolism and the other to Asian influenza with a fulminating septicaemia which killed the patient within a few hours the day before she was due to go home.

The ideal in combined therapy is for each case to be assessed by both the radiotherapist and the surgeon and for the treatment to be planned from the beginning. This has resulted in a 71% five-year apparent cure rate in 188 patients operated upon after irradiation between 1950 and October 1961. Moreover, in the last three years of this study, nine of 15 patients with malignant nodes were alive and well five years later, a survival rate of 60%.

It may well be, as suggested by Powers (1964), that smaller doses of preoperative irradiation would prove effective. We have used doses considered to be lethal by the radiotherapists, but proven not to be in a high percentage of patients. Dr. Powers has summarised the experimental evidence to support the concept of preoperative irradiation, and our considerable clinical material confirms his view. Recently Sir Eric Riches (1965) has advocated the same combination of therapy in the treatment of malignant renal tumours, and the available evidence, both experimental and clinical, indicates that the concept of preoperative irradiation, which has proved effective in the treatment of tumours in the genito-urinary tract, could be applied to the treatment of cancer elsewhere.

We have much to learn before it can be claimed with truth that the treatment of cervical cancer has been perfected, but great progress has been made. Combined therapy, carefully planned for each patient when technically possible, has eliminated irradiation failures with so-called recurrent uterine cancer. It avoids the necessity of salvage operations after high dose irradiation and greatly improves the results of radical surgery.

References

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